Lesson 3.6 Extra Practice Answers

1. **a)** yes
b) no
c) yes
d) yes
e) no
f) no

2. $x - 1$ and $x^2 + x + 4$

3. **a)** remainder is 14
b) remainder is 3
c) remainder is 8
d) remainder is 0
e) remainder is -1
f) remainder is 3

4. **a)** yes
b) no
c) no
d) no
e) yes
f) no

5. **a)** $(x + 4)(x + 2)(x - 1)$
b) $(2x - 1)(x + 4)(x - 2)$
c) $(x - 1)^2(x + 6)$
d) $(x - 5)(x - 4)(x - 1)(x + 3)$
e) $x(x - 3)(x + 3)(x - 6)(x + 6)$
f) $(x - 1)(x + 2)(x - 3)(x + 4)(x - 5)$

6. **a)** $f(x) = (x - 5)(x + 2)(x + 3)$
b) $f(x) = (x + 2)(x + 6)(x - 1)$
c) $f(x) = (x - 2)(x - 4)(x - 7)$
d) $f(x) = (x + 4)(x + 5)(x + 2)(x - 1)$
e) $f(x) = (x + 6)(x - 2)(x - 3)(x + 2)$
f) $f(x) = (x + 2)(x - 1)(x + 3)(x - 3)(x + 1)$

7. $k = -6$

8. $a + b = 4 + 4 = 8$

9. $a = 3$, $b = 14$, the other factor is $(3x - 4)$

10. $k = 6$

11. The expression $x^2 - x - 6$ equals $(x + 2)(x - 3)$, so -2 and 3 are zeros of $x^2 - x - 6$.
The values -2 and 3 are also zeros of $x^3 - 3x^2 - 4x + 12$, so $x^2 - x - 6$ is a factor of $x^3 - 3x^2 - 4x + 12$.